

Sub 217  
81

10. (Twice Amended) A digital communication system comprising:  
a front end receiving an input spectrum at an intermediate frequency, the input spectrum including an inserted predetermined frequency component, the front end having a signal path comprising in the order recited a first signal mixer, a signal sampler, a second signal mixer, and an equalizer, the first signal mixer lying in the first loop, the second signal mixer lying in the second loop, and the signal sampler lying in the third loop;  
first and second nested tracking loops, the first loop acquiring carrier frequency lock in operative response to the predetermined frequency component of the received spectrum, the second loop providing a signal adapted to position the spectrum at a predetermined location relative to baseband in operative response to said predetermined frequency component; and  
a third tracking loop coupled to define a symbol timing parameter in operative response to said predetermined frequency component.

106. (Amended) The communication system of claim 10, in which the first and second loops each have a controllable oscillator and a single phase detector for adjusting both oscillators responsive to the output of the second mixer.

D2  
cont

107. The communication system of claim 106, in which the first loop has a wide bandwidth to acquire carrier frequency lock and the second loop has a narrow bandwidth to track carrier frequency after carrier frequency lock.

108. The communication system of claim 107, in which oscillator of the first loop is coupled to the first mixer.

109. The communication system of claim 108, in which oscillator of the second loop is coupled to the second mixer.